

Supplementary Figures for
“ENSO’s Impact on the Gap Wind Regions of the Eastern Tropical Pacific Ocean”
by Alexander et al.
Submitted to Journal of Climate

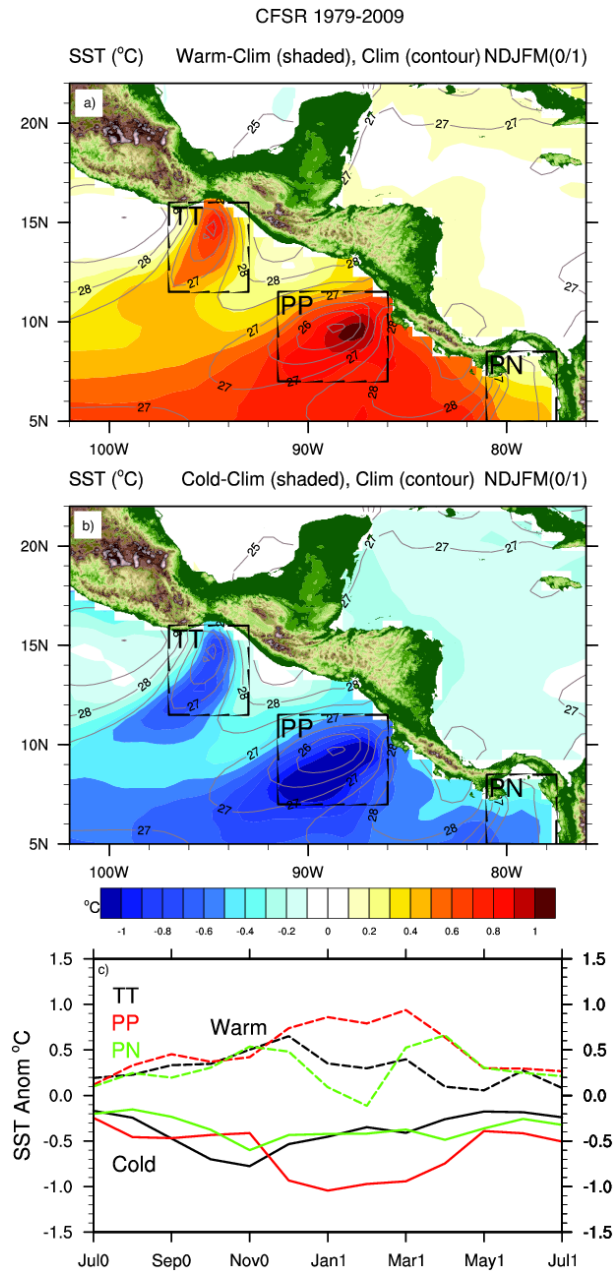


Fig. S1. (a) El Niño and (b) La Niña composite (shading) SST anomalies during NDJFM. Climatological mean (contours) are shown in both (a) and (b). The contour/shading is 0.5/0.1°C. Boxes denote the Tuahantepec (TT), Papagayo (PP), and Panama (PN) regions. (c) SST evolution of El Niño (dashed lines) and the La Niña (solid lines) from July(0) to July(1) in the TT (black), PP (red) and PN (green) regions shown in (a). The data are from CFSR.

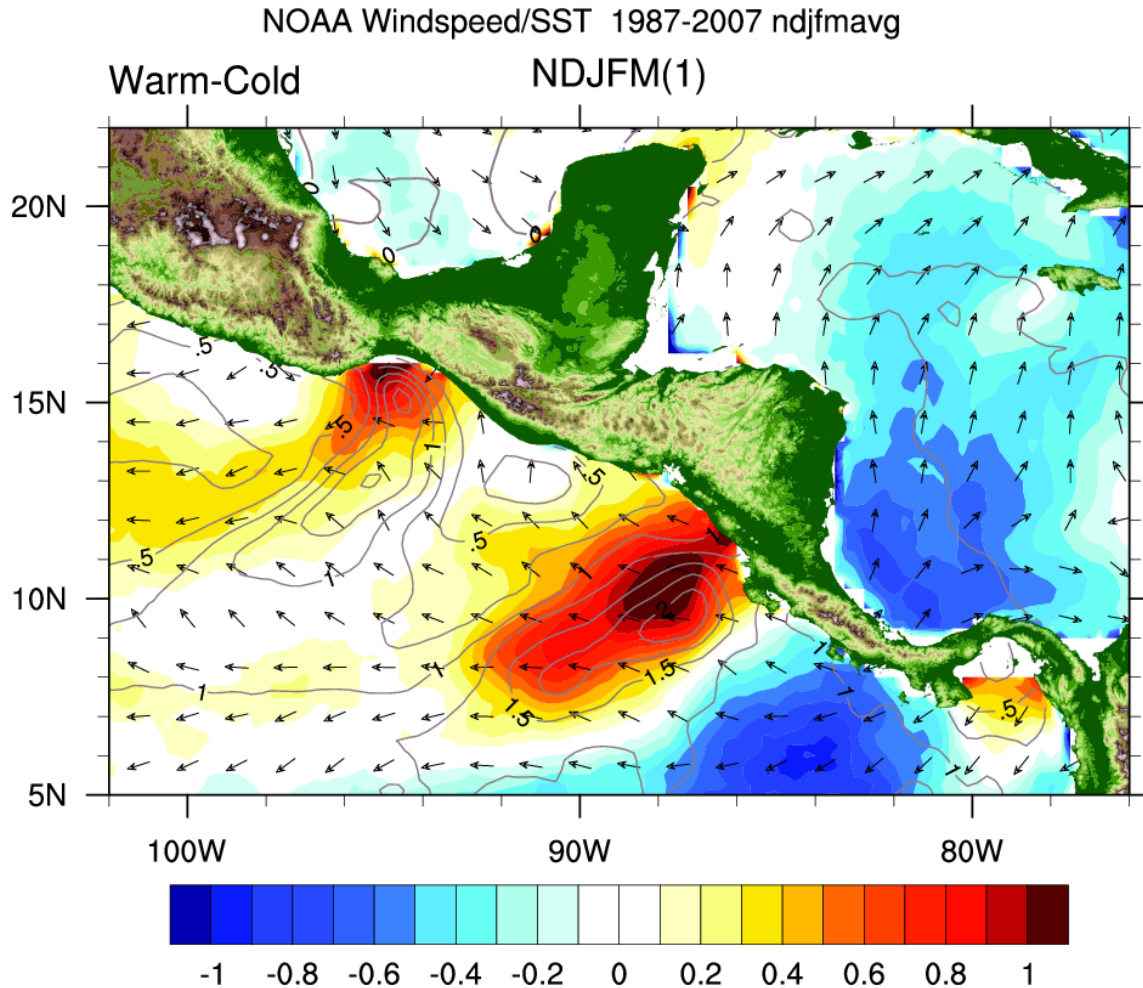


Fig. S2. El Niño – La Niña composite SST (contours), vector wind direction and wind speed (shaded), during NDJFM, as in Fig. 4b but here based on the NOAA high-resolution SST (Reynolds et al. 2007) and wind (Zhang et al. 2007) datasets. The ENSO events are drawn from the period of record: 1982-2007 for SSTs and 1987-2007 for the winds. The contour/shading interval is $0.25^{\circ}\text{C}/0.1 \text{ m s}^{-1}$.

The surface winds may also be influenced by local conditions. The wind speed may increase over the large positive SST anomalies during El Niño especially in the TT and PP regions due to the decrease stability of the atmospheric boundary layer and the enhanced downward vertical mixing of higher momentum air over warm mesoscale SSTs (e.g. see Xie 2004; Chelton and Xie 2010). Likewise, vertical mixing would decrease over cold SST anomalies during La Niña.

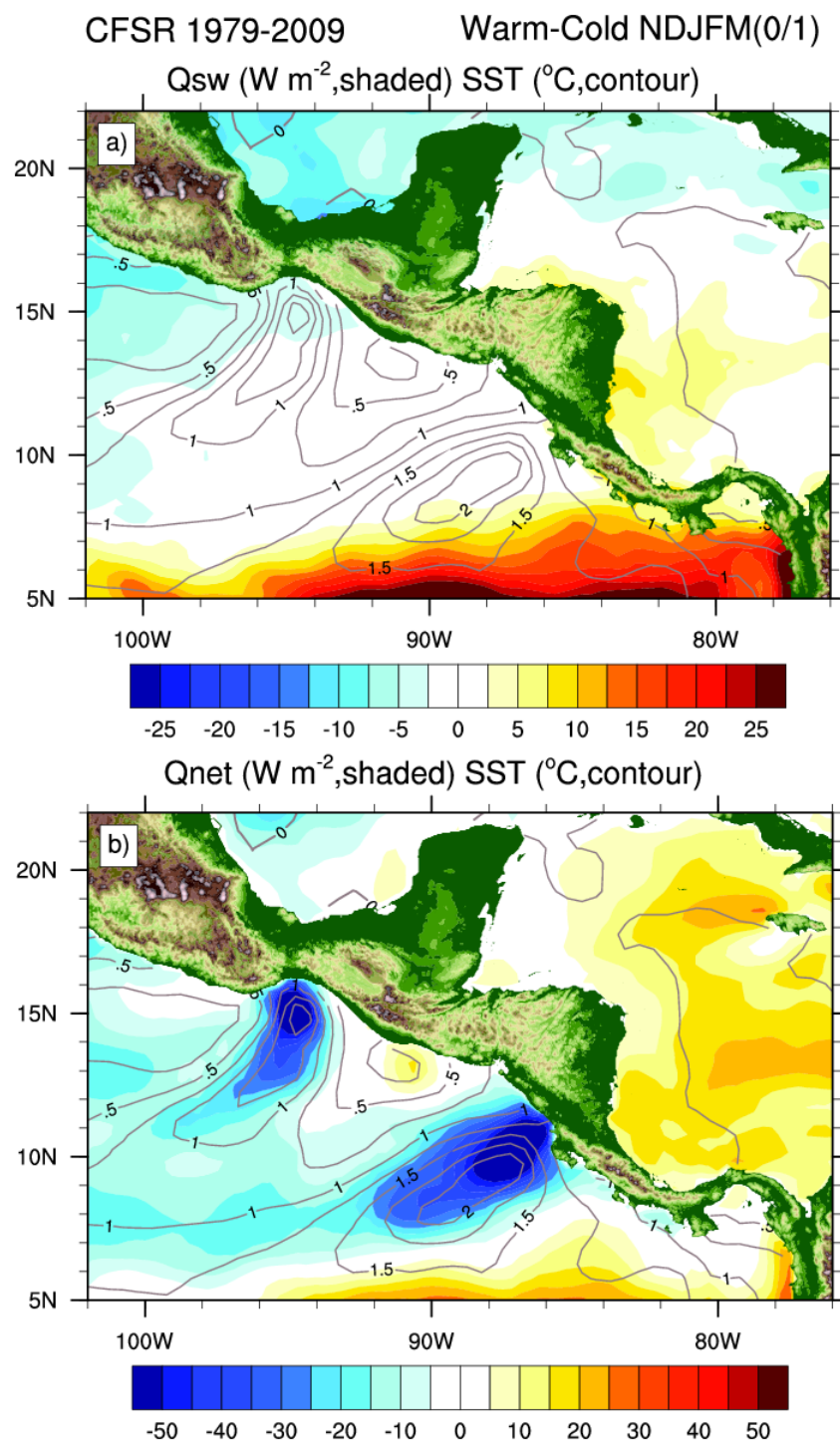


Fig. S3. El Niño – La Niña composite SST (contours) and (a) shortwave radiation and (b) net surface heat flux into the ocean (shading) during NDJFM. The contour/shading interval is (a) $0.25^{\circ}\text{C}/2.5 \text{ W m}^{-2}$ and (b) $0.25^{\circ}\text{C}/5 \text{ W m}^{-2}$. Data are from CFSR.

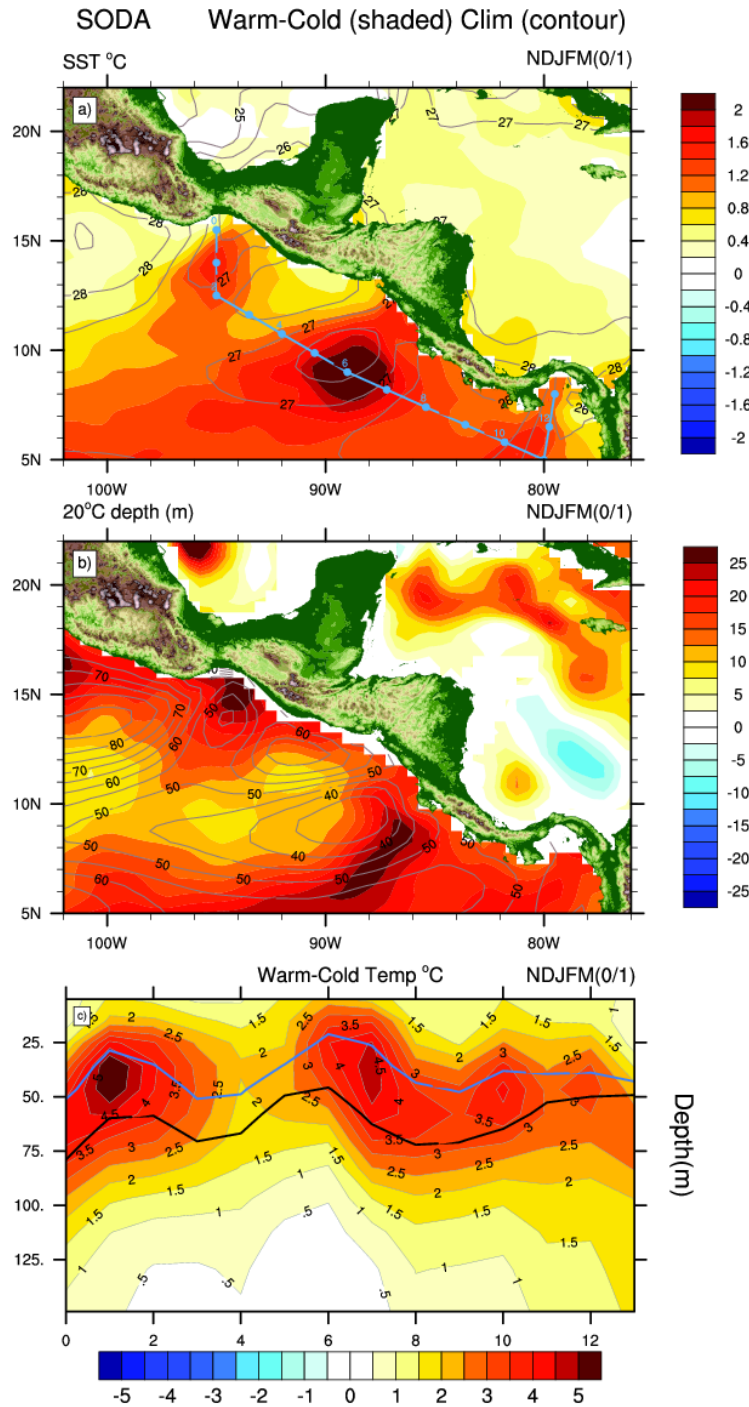


Fig. S4. Fields from the Simple Ocean Data Analysis (SODA). (a) SST Mean (contours) and El Niño – La Niña (shading), (b) Z20 Mean (contours) and El Niño – La Niña (shading). The contour/shading interval is (a) 0.5C/0.2C and (b) 5m/2.5 m. (c) Temperature anomalies as a function of depth along the transect shown in (a), black (blue) line is the depth of the Z20 surface in El Niño (La Niña). The climatology is for 1958-2007 and the ENSO events are from 1979-2007, the same as for CFSR except for the 2007-2008 La Niña .

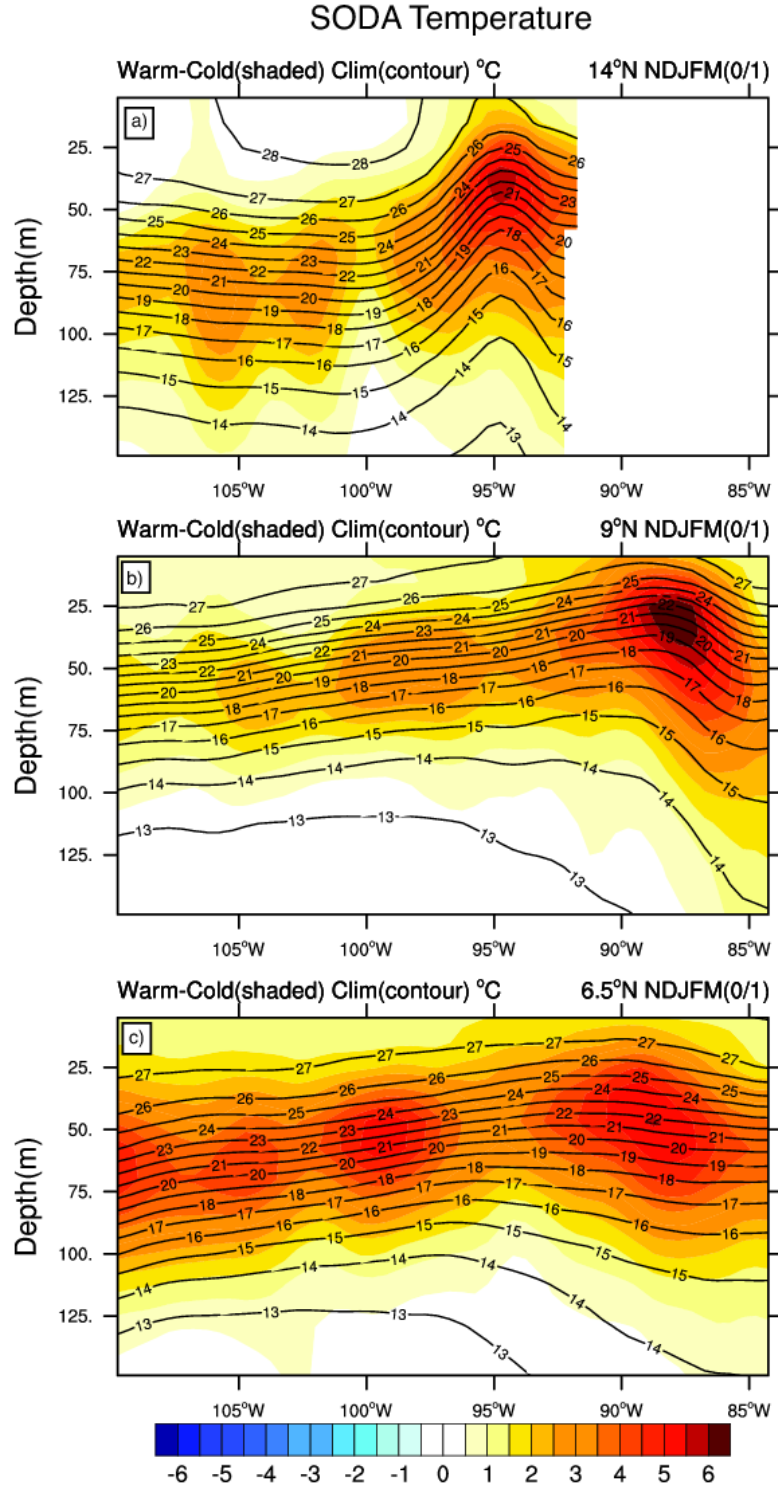


Fig. S5. Cross section of the mean temperature (contours) and El Niño – La Niña composite temperature (shading) at 14°N, 9°N and 6.5°N. The contour/shading interval is 1°C/0.5°C. Data are from SODA for the same periods as in Fig. S4.

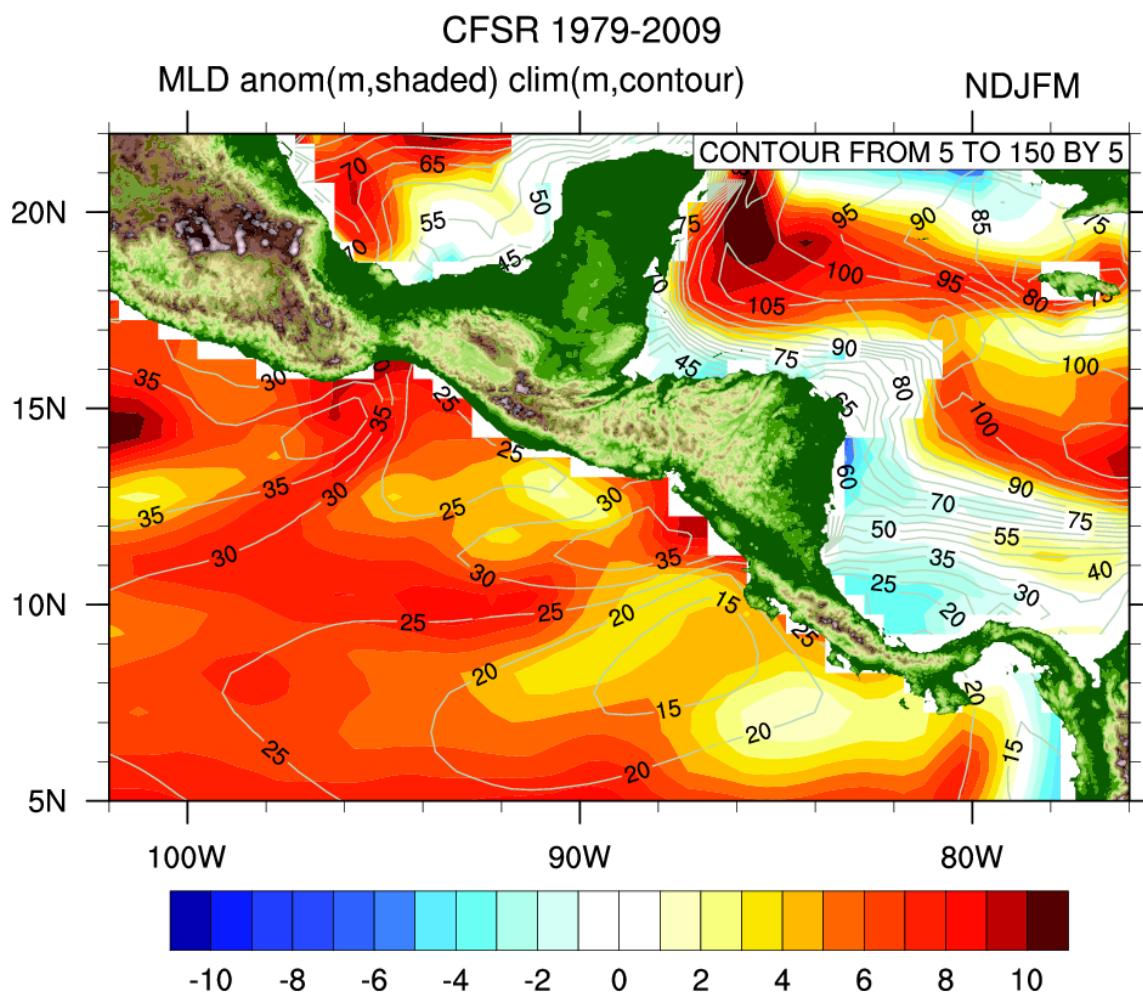


Fig. S6. Mean and El Niño – La Niña composite mixed layer depth (MLD) (during NDJFM). The contour/shading interval is (a) 5 m/1 m. Data are from CFSR.